

CLAIMS

1. A method to deliver nucleic acid to a cell wherein the nucleic acid is carried in a solution comprising dextrin and at least one sugar, the osmolarity of which corresponds substantially to the physiological osmolarity of the milieu surrounding the cell.
- 5 2. The method according to claim 1 wherein the molecular weight of the dextrin is in the range from about 1,000 - 200,000.
3. The method according to claim 2 wherein the molecular weight of the dextrin is between about 2,000 - 55,000.
4. The method according to claim 3 wherein the dextrin contains more than about 15%w/v of polymers of a degree of polymerisation greater than 12.
- 10 5. The method according to claim 4 wherein the dextrin contains more than about 50%w/v of polymers of a degree of polymerisation greater than 12.
6. The method according to claim 5 wherein the dextrin is present in the solution in an amount of less than about 20%w/v.
- 15 7. The method according to claim 6 wherein the dextrin is present in the solution in an amount selected from about: 1% w/v; 2% w/v; 3% w/v; 4% w/v; 5% w/v; 6% w/v; 7% w/v; 8% w/v; 9% w/v; 10% w/v; 11% w/v; 12% w/v; 13% w/v; 14% w/v; 15% w/v; 16% w/v; 17% w/v; 18% w/v; 19% w/v; 20% w/v.
8. The method according to claim 7 wherein the dextrin is present from 1-5%w/v.
- 20 9. The method according to claim 8 wherein the dextrin is preferably about 4% w/v.
10. The method according to any of claim 1 wherein the sugar is a disaccharide.
11. The method according to claim 10 wherein the amount of disaccharide is between about 1 and 10% w/v.
- 25 12. The method according to claim 11 wherein the disaccharide is an amount of between about 2 and 5% w/v.

13. The method according to claim 12 wherein the disaccharide is sucrose and the amount of sucrose is about 3% w/v.

14. The method according to claim 1 wherein the amount of dextrin is about between 2%-20% w/v and the amount of sucrose is between about 1-10% w/v.

5 15. The method according to claim 14 wherein the amount of dextrin is about 15% w/v and the amount of sucrose is about 3% w/v.

16. The method according to claim 15 wherein the amount of dextrin is about 4% w/v and the amount of sucrose is about 3% w/v.

10 17. The method according to claim 1 wherein the solution further comprises a divalent cation.

18. The method according to claim 17 wherein the divalent cation is in a concentration of at least 0.2mM.

19. The method according to claim 19 wherein the divalent cation concentration is between 0.2-3.0 mM.

15 20. The method according to claim 19 wherein the divalent cation is provided by $MgCl_2$ and the concentration is about 2.0mM.

21. The method according to claim 20 wherein the solution comprises about 4% w/v dextrin, about 3% w/v sucrose and about 2.0 mM $MgCl_2$.

22. The method according to claim 1 wherein the nucleic acid molecule is a vector.

23. The method according to claim 22 wherein the vector is adapted for eukaryotic expression.

20 24. The method according to claim 22 wherein the vector is a recombinant virus derived from adenovirus, retrovirus, adeno-associated virus, herpesvirus, lentivirus, vaccinia virus, or baculovirus.

25. The method of claim 24 wherein said vector is an adenovirus.

26. The method of claim 25 wherein said adenovirus further encodes an exogenous transgene.

25 27. The method of claim 26 wherein said transgene is a tumor suppressor gene.

28. The method of claim 27 wherein said tumor suppressor gene is p53.

29. The method of claim claims 24 to 26 wherein said vector is replication competent.

30. The method of claim 29 wherein said vector is a conditionally replicating replication competent vector.

5 31. A composition for delivery of a recombinant viral vector to a cell comprising a recombinant viral vector in a solution comprising dextrin and at least one sugar, the osmolarity of which corresponds substantially to the physiological osmolarity of the milieu surrounding the cell.

32. The composition of claim 31 wherein the recombinant viral vector is derived from adenovirus, retrovirus, adeno-associated virus, herpesvirus, lentivirus, vaccinia virus, or

10 baculovirus.

33. The composition of claim 32 wherein the viral vector is derived from adenovirus.

34. The composition of claim 33 wherein the viral vector is a selectively-replicating replication competent adenoviral vector.

15 35. A pharmaceutical formulation comprising a recombinant adenoviral vector, a dextrin, a sugar and a divalent cation.

36. A method to deliver nucleic acid to a cell comprising: providing a solution of dextrin, a sugar, a divalent cation and nucleic acid and contacting the solution with a cell to be transfected or transformed.